surface of its proximal end, while the outer metatarsal of the right-foot of the Tapir, with which, in other respects, it most closely corresponds, has two articular surfaces. In the cast of a hind-foot of a Palæothere, I find that the outer metatarsal bone closely agrees with this metatarsal bone of the Macrauchene, in the structure just alluded to: the articulation with the middle metatarsal being by a single sub-oval facet, which stands out a little way from the surface of the bone: the articular surface in the Macrauchene presents a similar form and condition, and is similarly situated to that in the Palæothere, being at the posterior part of the lateral surface, and a little below the superior or tarsal articular surface. The bone expands towards its distal end, which corresponds in structure with those of the two lateral metatarsals in the fore-foot, in being completely divided into two trochlear surfaces by a well-developed median ridge, and in having the posterior half of this ridge suddenly produced, so as to project about two lines further from the trochlear surface than the anterior part of the same ridge. In both the Tapir and Palæothere this anterior part of the ridge is wholly suppressed, and the posterior is much more feebly developed than in the Macrauchenia. The metatarsal bone here described is of exactly the same length with the internal metacarpal bone, and proves, in conjunction with the proportions of the astralagus, that the fore and hind feet of the Macrauchenia were of equal size.

Thus then we obtain evidence, from a few mutilated bones of the trunk and extremities of a single representative of its race, that there once existed in South America a Pachydermatous quadruped, not proboscidian, which equalled in stature the Rhinoceroses and Hippopotamuses of the old world. But this, though an interesting and hitherto unsuspected fact, is far from being the sum of the information which is yielded by these fossils. We have seen that the single ungueal phalanx bespeaks a quadruped of the great series of *Ungulata*, and this indication is corroborated by the condition of the radius and ulna, which are fixed immoveably in the prone position. Now in the Ungulated series there are but two known genera,—the Rhinoceros and Palæotherium,—which, like the quadruped in question, have only three toes on the fore-foot. Again, in referring the Macrauchenia to the Tridactyle family of Pachyderms, we find, towards the close of our analysis, and by a detailed comparison of individual bones, that the Macrauchenia has the closest affinity to the Palæotherium.

But the Palæotherium, like the Rhinoceros and Tapir, has the ulna distinct from the radius, and the fibula from the tibia; so that even if the Parisian Pachyderm had actually presented the same peculiarities of the cervical vertebræ as the Patagonian one, it would have been hazardous, to say the least, while ignorant of the dentition of the latter, to refer it to the genus *Palæotherium*.

Most interesting, indeed will be the knowledge, whenever the means of obtaining it may arrive, of the structure of the skull and teeth in the Macrauchenia.

Meanwhile, we cannot but recognise, in the anchylosed and confluent state of the bones of the fore-arm and leg, a marked tendency in it towards the Ruminant Order, and the singular modifications of the cervical vertebræ have enabled us to point out the precise family of that order, with which the Macrauchenia is more immediately allied.

In first demonstrating this relationship, it was shown in how many particulars the *Camelidæ*, without losing the essential characters of Ruminantia, manifested a tendency to the Pachydermatous type; and the evidence which the lost genera, *Macrauchenia* and *Anoplotherium*, bear to a reciprocal transition from the Pachyderms to the Ruminants, through the *Camelidæ*, cannot but be viewed with extreme interest by the Zoologist engaged in the study of the natural affinities of the Animal Kingdom.

The Macrauchenia is not less valuable to the Geologist, in reference to the geographical distribution of animal forms. It is well known how unlooked-for and unlikely was the announcement of the existence of an extinct quadruped entombed in the Paris Basin, whose closest affinities were to a genus, (*Tapirus*,) at that time, regarded as exclusively South American. Still greater surprise was excited when a species of the genus *Didelphys* was discovered to have co-existed in Europe with the *Palæotherium*.

Now, on the other hand, we find in South America, besides the Tapir, which is closely allied to the Palæothere, — and the Llama, to which the Anoplothere offers many traces of affinity, — the remains of an extinct Pachyderm, nearly akin to the European genus *Palæotherium*: and, lastly, this Macrauchenia is itself in a remarkable degree a transitional form, and manifests characters which connect it both with the Tapir and the Llama.

ADMEASUREMENTS OF THE BONES OF THE MACRAUCHENIA.

	Inches.	Lines.
Length of third (?) cervical vertebra	7	9
Vertical diameter of ditto	4	0
Do. do. of body of ditto	2	3
Transverse diameter of ditto	3	3
Vertical diameter of spinal canal	1	...
Length of fourth lumbar vertebra	5	5
Vertical diameter of body of ditto	2	9
Transverse diameter of ditto	2	10
Vertical diameter of spinal canal	1	1
Transverse ditto ditto *	1	6

* This diameter increases rapidly in the posterior lumbar vertebræ, in correspondence with the enlargement of the spinal chord, which gives off the great nerves of the hinder extremities.